



**UNSW**  
SYDNEY



## Real-Time Human Performance Assessment

**Working with technologies that enable real-time cognitive human performance assessment of attention, emotion, motivation, situation awareness, task assessment, and cognitive workload indicators.**

### Competitive advantage

- Decades of accumulated knowledge and algorithms for real-time human performance
- Software that allows the system to operate with any commercial off-the-shelf system
- Expertise to transform lab-based psychology into in situ real-time metrics
- A technology that works with different data sources and is robust against loss of a data source. A technology that assesses human mental states on a second-by-second basis and integrates them to adapt AI and automation to the human.

### Impact

- Real-time improved understanding of human performance and behaviour in organisations
- Improved decision making through real-time cognitive augmentation
- Trusted human-machine environments

### Successful applications

- eLearning commercialisation, Smart Sparrow
- Real-time assessment of human performance in air traffic control systems
- Trusted human-autonomy teaming in teleoperation
- User-task co-adaptation for effective interactive simulation environments, offering a generic bi-directional human-machine communication system that allows users to adapt their cognitive load to a task and adapting the task to the user

### Capabilities and facilities

- An integrated 12-seat laboratory—using a variety of sensors including EEG, Kinect, Eye Tracker, and physiological sensors—for cognitive and behavioural human performance measurement
- High-fidelity simulation environments including air-traffic management and uninhabited all-domains vehicles (UxVs) modelling
- State-of-the-art defence simulation environments including Virtual Battlespace System
- The technology uses multiple data sources including electroencephalography (EEG), facial expressions, language, speech, keyboard, and vibrations

### Our partners

- Defence Science and Technology (DST)

### More Information

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